THE INTERNATIONAL UNIVERSITY OF LOGISTICS AND TRANSPORT IN WROCLAW

SYLLABUS

Teacher					
Course	Data-Driven Logistics and Decision Support Systems				
Module	Compulsory subjects	ECTS	4	Course code	23SM.P.L.A.8.2

Major	Speciality	Academic year	
LOGISTICS	Industrial systems engineering	2023/2024	
Semester	First	Year of studies	First

Type of studies	Full-time				Extramural			
Type of classes	Lecture	Exercise	Laboratories	Project	Lecture	Exercise	Laboratories	Project
Amount of hours	30	30						
TOTAL	60							

Course objectives	**The main objective of the course is to familiarize students with data-driven approaches and decision support systems used in logistics and supply chain management. The course focuses on data analysis, information systems, and the application of analytical tools supporting decision-making in logistics processes.**

Minimum knowledge required from the student before the classes beginning
Knowledge in the field of logistics as well as management information systems and computer science basic tools (MS Office package)

Recommended literature to study before the classes beginning
Sanders N.R., Big Data Driven Supply Chain Management: A Framework for Implementing Analytics and Turning Information into Intelligence, Pearson, 2019

LEARNING OUTCOMES			KEK	METHODS OF ASSESSMENT	
KNOWLEDGE	K01	**Present and explain various data collection and data processing techniques; explain the role of data in logistics decision-making**	**K2_W04_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K02	**Demonstrate knowledge and understanding of IT systems and decision support tools used in logistics and supply chain management**	**K2_W08_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K03	**Identify, describe and analyse data-driven tools supporting logistics processes**	**K2_W05_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K04	**Explain selected methods of IT-supported logistics processes and decision-making techniques used in logistics planning; present them in English**	**K2_W04_L_P K2_W08_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
SKILLS	S01	**Use integrated knowledge from logistics and data analysis to select appropriate tools for identifying and analysing logistics problems**	**K2_U01_L_P**	**EM1 EM10**	Oral exam. Written test in the form of open tasks.
	S02	**Apply IT tools and analytical methods to support logistics decision-making and process optimisation**	**K2_U03_L_P K2_U09_L_P**	**EM10 EM15**	Project evaluation Evaluation of activity in the class-room
	S03	**Demonstrate basic skills in database design and data processing in logistics applications**	**K2_U04_L_P K2_U09_L_P**	**EM1 EM8**	Oral exam. Written test in the form of open tasks
	S04				
SOCIAL COMPETENCE	SC01	**Demonstrate readiness for independent and critical acquisition of knowledge in the field of data-driven logistics**	**K2_K03_L_P**	**EM16**	Assessment of the work, students co-operation in
	SC02	**Apply analytical and IT tools in an entrepreneurial way in logistics problem-solving**	**K2_K03_L_P**	**EM15 EM16**	Evaluation of activity in the lab. Project evaluation
	SC03	**Cooperate in teams in the development of data-driven logistics solutions, considering economic and organisational aspects**	**K2_K05_L_P**	**EM15 EM16**	Evaluation of activity in the lab. Project evaluation

Course contents	Lecture	Introduction to data-driven logistics Role of information systems in logistics Data collection and processing in logistics Decision support systems in logistics Data analysis methods in supply chain management Forecasting and data-driven planning Optimisation methods in logistics systems Integration of IT systems in logistics Data visualisation and reporting Applications of analytics in logistics decision-making

	Laboratories	Data analysis in logistics case studies Use of spreadsheets and analytical tools Demand forecasting exercises Decision-making based on logistics data Case studies: optimisation of logistics processes Designing data-driven logistics solutions

Teaching methods	**TM2 TM11**	**A lecture with a multimedia presentation, topic-related films, discussions**
	TM14	**Laboratories – experiment and laboratory analysis**
	TM8	**Project method**

Obligatory literature	1	Albright S.C., Winston W.L., Business Analytics: Data Analysis and Decision Making, Cengage Learning, 2020
	2	Turban E., Sharda R., Delen D., Decision Support and Business Intelligence Systems, Pearson, 2018
	3	Min H., Global Business Analytics Models: Concepts and Applications in Predictive, Descriptive and Prescriptive Analytics, Springer, 2018

Additional literature	1	Marr B., Artificial Intelligence in Practice: How 50 Successful Companies Used AI and Machine Learning to Solve Problems, Wiley, 2019
	2	Turban E., Sharda R., Delen D., Decision Support and Business Intelligence Systems, Pearson, 2018
	3	

Requirements to pass the course
The lab grade is composed of the following elements: 40% grade from practical classes, 60% a project of a system that supports sales, warehouse, production and logistics designer in Q-TORAGA 3000 system of QBS company. The lecture is completed with an oral exam which refers to subject-matter of the course. To get a satisfying mark for the exam, the student must get 50% of the points from the base sum. The share of each assessment in the final mark in the Assessment part is as follows: 50% assignment, 50% exam.